

May 27, 1966

Status Report- August 1, 1965 - January 31, 1966

NASA Grant NsG-728/36-03-042

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During the period from August 1, 1965 to January 31, 1966, we have been primarily involved in the formulation and initial design of an experimental system in which a DDP-116 digital computer is used to control a General Mills Model 100 remote manipulator. Our activities during the period are as listed below.

- 1) The DDP-116 computer was delivered and installed and the system programs supplied were debugged to make the system operational.
- 2) The General Mills manipulator was delivered and installed.
- 3) Extensive modifications to the manipulator were planned.
 - a) The relay controls will be replaced by SCR amplifiers.
 - b) The hoist motor will be replaced by a series motor.
 - c) Feedback potentiometers will be installed to allow automatic positioning control.
 - d) Two more arm pivots will be added to make the control problem more general.
- 4) The initial design requirements for the computer inter-

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Page two.

and the preliminary design was initialed.

- 5) The computer software control requirements were formulated.

From the end of the above reporting period to this date we wish to report that the design and construction of the experimental system is nearing completion and that in a few weeks we should be in the testing phase of our hardware activities. Several control algorithms have also been formulated and are being programmed using the DAP assembly language. The algorithm testing will commence as soon as the experimental system is operational.


H. W. Mergler